

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-20. (Canceled)

21. (Withdrawn) A method of detaching and collecting an IC tag from a paper sheet to which said IC tag is attached, comprising: a detachment step of detaching said IC tag from said paper sheet by applying external force to an adhesive surface between said paper sheet and said IC tag; and a fractionation step of fractionating the detached IC tag from other substances.

22. (Withdrawn) The method as set forth in claim 21 wherein, in said detachment step, said paper sheet is immersed in an immersion liquid and external force is applied to said adhesive surface by a flow of said immersion liquid.

23. (Withdrawn) The method as set forth in claim 21, further comprising: a fragmentation step of immersing in an immersion liquid said paper sheet from which said IC tag was detached in said detachment step, and disintegrating or fragmenting said paper sheet into paper components by a flow of said immersion liquid and dispersing said paper components in said immersion liquid, said fragmentation step being followed by said fractionation step.

24. (Withdrawn) The method as set forth in claim 23 wherein, in said fractionation step, a suspension in which said paper components are dispersed by the flow of said immersion liquid is passed through a screen.

25. (Withdrawn) The method as set forth in claim 22, wherein a pattern of said flow is changed.

26. (Withdrawn) The method as set forth in claim 21, further comprising: a cleaning step of cleaning said IC tag detached from said paper sheet to remove paper and/or an adhesive adhering to said IC tag.

27. (Withdrawn) The method as set forth in claim 21, further comprising: a preparation step of swelling said paper sheet by causing said paper sheet to hold a swelling liquid in which paper and/or an adhesive is soluble, said preparation step being followed by said detachment step.

28. (Withdrawn) The method as set forth in claim 26 wherein, in said preparation step and/or said cleaning step, said adhesive adhering to said IC tag is decomposed by an enzyme.

29. (Withdrawn) The method as set forth in claim 21 wherein, in said fractionation step, said IC tag is removed and collected from the suspension in which the paper components of said paper sheet are dispersed.

30. (Withdrawn) The method as set forth in claim 29 wherein said suspension is put in a container, said IC tag in said suspension is caused to sink to a bottom of said container, and by supplying a liquid flow containing small bubbles into said container, said bubbles are caused to adhere to said paper components to float them up to a liquid surface of said container.

31. (Withdrawn) The method as set forth in claim 22 wherein heat is applied to said immersion liquid and/or said swelling liquid.

32. (Withdrawn) The method as set forth in claim 21 wherein a plurality of the IC tags are successively processed as one bundle in each of said steps.

33. (Withdrawn) The method as set forth in claim 24 wherein, after collection of said IC tag in said fractionation step, a liquid is squeezed from said suspension and a residual substance of said suspension from which said liquid is squeezed is used as paper material.

34. (Withdrawn) The method as set forth in claim 33 wherein the same liquid is employed in each of said steps, and after collection of said IC tag in said fractionation step, a liquid is squeezed from said suspension and the squeezed liquid is reused in each of said steps.

35. (Currently Amended) A system for detaching and collecting an IC tag from a paper sheet to which said IC tag is attached, comprising:

a unit for swelling said paper sheet by ~~causing~~ soaking said paper sheet ~~to hold in~~ a swelling liquid in which paper and/or an adhesive is soluble;

a detacher for detaching said IC tag from said paper sheet by applying an agitating stream of ~~water~~ the liquid to an adhesive surface between the swollen paper sheet and said IC tag in the liquid, to agitate and separate said IC tag from said paper sheet; and

a fractionator for fractionating the detached IC tag from other substances by said detacher, wherein

said swelling unit pours the liquid, in which said paper sheet and said IC tag are soaked, into said detacher.

36. (Previously Presented) The system as set for in claim 35, further comprising:

a cleaner for said IC tag detached from said paper sheet to remove paper and/or an adhesive adhering to said IC tag.

37. (Withdrawn) An apparatus for detaching and collecting an IC tag from a paper sheet to which said IC tag is attached, comprising: a detaching container for storing a liquid; a solid type screen, which is provided within said detaching container and functions as a filter, for holding said paper sheet to which said IC tag is attached; an agitator for generating a flow of said liquid within said detaching container by agitating said liquid; and discharge ports, formed in side and/or bottom surfaces of said detaching container, for discharging paper components, passed through said solid type screen, of the paper components of said paper sheet fragmented within said solid type screen by said flow generated by said agitator.

38. (Withdrawn) The apparatus as set forth in claim 37, further comprising: a paper-component processing container for holding a suspension that contains paper components passed through said solid type screen, and separating said suspension into said paper components and a liquid; a suspension flow path for supplying said suspension from the discharge ports of said detaching container to said paper-component processing container; a return flow path for returning to said detaching container said liquid separated by said paper-component processing container; and a pump for circulating said liquid between said detaching container and said paper-component processing container, through said suspension flow path and said return flow path.

39. (Withdrawn) The apparatus as set forth in claim 37 wherein said agitator comprises an impeller and a drive unit for driving said impeller.

40. (Withdrawn) The apparatus as set forth in claim 37 wherein said agitator operates between a first operating state in which a swirl flow of said liquid is generated within said detaching container in a direction of positive rotation and a second operating state in which said swirl flow is generated in a direction of reverse rotation; and when agitating said liquid, said first operating state and said second operating state are switched in predetermined cycles.

41. (Previously presented) The system as set for in claim 35, wherein the detacher immerses said paper sheet and said IC tag in the water while said paper sheet and said IC tag are exposed to agitation by the agitating stream of water.

42. (Previously presented) The system as set forth in claim 41 wherein the agitating stream of water comprises a jet of bubble filled water.

REMARKS

Reconsideration and allowance in view of the foregoing amendments and the following remarks is respectfully requested.

Claim status/Amendments

In this response, claim 35 has been amended to clarify the subject matter for which patent protection is sought. No new matter is introduced. Entry of the amendments is respectfully requested in that they clarify the already existing difference between the claimed subject matter and what can be gleaned from the cited references and thus facilitate a compact prosecution.

Rejections under 35 USC § 103

The rejection of claims 35-36 under 35 USC §103(a) as being unpatentable over Tokita et al. (5,619,765) in view of Vickers (4,342,425), is to the degree that it still pertains to the claims as amended, respectfully traversed.

Firstly, amended claim 35 recites that the paper sheet (2) and the IC tag (1) are soaked and detached in the liquid by the detacher (13). Specifically, in amended claim 35, the detacher (13) applies an agitating stream of the liquid to an adhesive surface between the paper sheet (2) and the IC tag (1) soaked in the liquid.

This amendment is based on the disclosure of FIG. 2, page 11, lines 8-10, page 12, lines 5-25, and page 12, line 11 to page 14, line 3 in the originally filed documents.

It the Tokita at al. reference, image removal unit 3 neither soaks transfer papers 10 nor uses waterpower. Indeed, the Tokita arrangement is directed to cleaning and collecting paper, not the material which is removed from the paper. The claimed arrangement is directed to the very reverse. Indeed, the paper is broken down by the process via which the IC tag is removed, separated from the tags via a floatation process, then separated into waste water and paper material (see Fig. 2 of the instant application).

The question therefore, is how does the hypothetical person of ordinary skill simply take the disclosure of Tokita et al. and reverse the very collection/disposal process it is based on without a full and adequate working knowledge of the claimed subject matter.

Vickers does not disclose or suggest applying an agitating stream of the liquid to an adhesive surface or the like, and is directed to cleaning surfaces with a high velocity jet of liquid with cavitation bubbles surrounding the jet. The disclosure of Vickers is such as to suggest that the power imparted to the surface being cleaned would be sufficient to damage the "recording medium" disclosed in Tokita et al. to the point of defeating the very intent of this reference.

It is therefore submitted that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). M.P.E.P. § 2143.01.

Secondly, amended claim 35 recites that the swelling unit (10) pours the immersion liquid (c.f. the jetting used in Vickers), in which the paper sheet (2) and the IC tag (1) are soaked, into the detachier (13). This amendment is based on the descriptions on page 11 lines 8-10 and page 12 lines 5-25 of the original specification and FIG. 2.

There is no pouring disclosed or suggested in either of cited references. Indeed, Vickers would suggest the antithesis of pouring as noted *supra*.

A further stumbling block to the proposed combination of art is that Tokita discloses roller elements for transferring the papers 10, for example, the separation roller 302, the press roller 309 and the roller pair 204. It is submitted that these type of roller elements, which are instrumental to the operation of Tokita – viz., the separation roller 302, the press roller 309 and the roller pair 204, are not required in amended claim 35 since a stream of the liquid is utilized.

The teachings of these rollers cannot be blithely ignored for the sole purpose of changing the entire mode of operation of the Tokita arrangement and to introduce a cleaning jet such as found in Vickers in their place.

It is submitted that if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). M.P.E.P. § 2143.02.

In this rejection wherein the rollers are replaced with a fluid jet, is clearly a major change in operational mode.

In amended claim 35, a stream of the liquid is poured for swelling the paper sheet (2) and the IC tag (1) and detaching the IC tag (1) from the paper sheet (2), as well as transferring the paper sheet (2) and the IC tag (1) from the swelling unit (10), into the detacher (13).

Vickers does not disclose or suggest using a stream of the liquid for a transferring process - this reference merely discloses cleaning.

Consequently, neither Tokita nor Vicker discloses or suggests the aforementioned features recited in amended claim 35, and no combination could be expected to suggest the claimed subject matter. Therefore, the subject matter of the present invention defined in claim 35 is both novel and non-obvious over Tokita or Vickers and should be allowed.

Claim 36, which remains un-amended, calls for a system comprising a cleaner (-) for cleaning the IC tag (1) detached from the paper sheet (2) to remove paper and/or an adhesive adhering to the IC tag (1). Whereas, Tokita, at column 8 lines 7-9, discloses: A cleaning device 304 cleans the surfaces of the separation roller 302 and is driven by a drive section, not shown.

In other words, Tokita does not disclose such a technique of washing the toner (substance 11) detached from the paper (medium 10). Namely, if the substance 11 in Tokita and the IC tag (1) in claim 36 could be identified, the cleaning device 304 should clean the substance 11. Therefore, the subject matter of the present invention defined in each of Claims 35-36 is not obvious over Tokita or Vickers taken alone or in combination.

Claim 36 depends from amended claim 35 and should be allowed because it recites the additional features. The same is advanced in connection with the rejection of claims 41 and 42.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
LOWE HAUPTMAN HAM & BERNER, LLP

A handwritten signature in cursive script, reading "Kenneth M. Berner".

Kenneth M. Berner
Registration No. 37,093

1700 Diagonal Road, Suite 300
Alexandria, Virginia 22314
(703) 684-1111
(703) 518-5499 Facsimile
Date: October 13, 2009
KMB/KT/cac